

Serial No. 09/989,962  
August 29, 2003  
Reply to the Office Action dated May 30, 2003  
Page 5 of 7

#### REMARKS/ARGUMENTS

Claims 1-5 and 11 are pending in this application. By this Amendment, Applicant AMENDS the specification and claim 1 and CANCELS claims 6-10 and 12.

Applicant affirms the election of Group I, including claims 1-5 and 11. Further, Applicant reserves the right to file a Divisional Application to pursue Group II, including claims 6-10 and 12.

The Examiner objected to the Specification for allegedly containing a minor informality. Applicant has amended the Specification to correct the minor informality noted by the Examiner. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the objection to the Specification.

Claims 1-5 and 11 were rejected under 35 U.S.C. § 102(e) as being anticipated by Agarwal et al. (U.S. 6,201,276). Applicant respectfully traverses the rejection of claims 1-5 and 11.

Claim 1 has been amended to recite:

**"An MIM capacitor comprising:  
a lower electrode comprising a plurality of metal layers  
including a top metal layer;  
an upper electrode; and  
a dielectric layer positioned between said lower electrode and  
said upper electrode,  
wherein the top metal layer includes an insulating metal oxide  
layer disposed on the entire surface thereof." (emphasis added)**

Applicant's claim 1 recites the features of "a lower electrode comprising a plurality of metal layers including a top metal layer," "a dielectric layer positioned between said lower electrode and said upper electrode," and "the top metal layer includes an insulating metal oxide layer disposed on the entire surface thereof." With the improved features of claim 1, Applicant has been able to provide a downsized, high-capacity MIM capacitor provided on a compound semiconductor substrate (see, for example, the first full paragraph on page 2 of the originally filed Specification).

First, the Examiner has alleged in the paragraph bridging pages 2 and 3 of the

Serial No. 09/989,962

August 29, 2003

Reply to the Office Action dated May 30, 2003

Page 6 of 7

outstanding Office Action that lines 20-27 of column 4 of Agarwal et al. teach the feature of a lower electrode comprising a plurality of metal layers. However, lines 14-16 of column 4 of Agarwal et al. disclose that "a first conductive layer in the form of a lower electrode 14 made of a conductive material which is formed over substrate 12," and lines 31-34 of column 5 of Agarwal et al. disclose that "a second conductive layer in the form of an upper electrode 19 made of a conductive material is then formed over passivation layer 18a and dielectric layer 16." Thus, Agarwal et al. clearly teaches that the lower electrode 14 is formed of a single layer, **NOT** formed of multiple layers as recited in Applicant's claim 1. The portion of Agarwal et al. relied upon by the Examiner only lists various materials which could be used in the single layer that constitutes the lower electrode 14.

Thus, Agarwal et al. clearly fails to teach or suggest the feature of "a lower electrode comprising a plurality of metal layers including a top metal layer" recited in Applicant's claim 1.

Applicant amended claim 1 to recite the feature of "the top metal layer includes an insulating metal oxide layer disposed on the entire surface thereof." The Examiner has alleged in the paragraph bridging pages 2 and 3 of the outstanding Office Action that reference number 16 of Agarwal et al. teaches both the insulating metal oxide layer and the dielectric layer of Applicant's claim 1. At best, Agarwal et al. teaches ONLY a single layer, and more specifically, a single dielectric layer 16 that could be made of a metal oxide (tantalum oxide), **NOT** the use of a dielectric layer and a lower electrode which includes a metal oxide layer as recited in Applicant's claim 1.

Thus, Agarwal et al. clearly fails to teach or suggest the features of "a dielectric layer positioned between said lower electrode and said upper electrode" and "the top metal layer includes an insulating metal oxide layer disposed on the entire surface thereof" as recited in Applicant's claim 1.

Therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of claim 1.

**FAX RECEIVED**

**AUG 29 2003**

**GROUP 2800**

**OFFICIAL**

Serial No. 09/989,962  
August 29, 2003  
Reply to the Office Action dated May 30, 2003  
Page 7 of 7

Accordingly, Applicant respectfully submits that none of the prior art of record, applied alone or in combination, teaches or suggests the unique combination and arrangement of elements recited in claim 1 of the present application. Claims 2-5 and 11 depend upon claim 1 and are therefore allowable for at least the reasons that claim 1 is allowable.

In view of the foregoing amendments and remarks, Applicant respectfully submits that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Date: August 29, 2003

  
Attorneys for Applicants

Joseph R. Keating  
Registration No. 37,368

Christopher A. Bennett  
Registration No. 46,710

**KEATING & BENNETT LLP**  
10400 Eaton Place, Suite 312  
Fairfax, VA 22030  
Telephone: (703) 385-5200  
Facsimile: (703) 385-5080